

CLAIMS

What is claimed is:

1. A method of identifying an anti-nematode agent, comprising:

administering a test compound to a nematode;

5 detecting a binding of the test compound to a major sperm protein of the nematode; and

monitoring a female sexual maturation of the nematode, wherein inhibition of the female sexual maturation indicates that the test compound includes the anti-nematode agent.
- 10 2. The method of claim 1, wherein monitoring the female sexual maturation of the nematode further comprises monitoring an oocyte meiotic maturation.
3. The method of claim 1, wherein monitoring the female sexual maturation of the nematode further comprises monitoring a gonadal sheath cell contraction.
4. The method of claim 1, wherein monitoring the female sexual maturation of
15 the nematode further comprises monitoring an ovulation.
5. The method of claim 1, wherein monitoring the female sexual maturation of the nematode further comprises optical monitoring.
6. The method of claim 5, wherein optical monitoring further comprises optical monitoring by video microscopy.

7. The method of claim 5, wherein optical monitoring further comprises optical monitoring by fluorescent imaging.
8. The method of claim 1, wherein administering further comprises administering the test compound in combination with a pharmaceutically acceptable carrier.
9. A method of identifying an anti-nematode agent, comprising:
contacting a test compound to a major sperm protein polypeptide;
detecting a composition including the test compound and the polypeptide;
administering the test compound to a nematode; and
10 monitoring a female sexual maturation of the nematode by optical monitoring, wherein slowing of the female sexual maturation indicates that the test compound includes the anti-nematode agent.
10. The method of claim 9, wherein the polypeptide is SEQ ID NO: 2.
11. The method of claim 9, wherein monitoring the female sexual maturation of the nematode further comprises monitoring an oocyte meiotic maturation.
12. The method of claim 9, wherein monitoring the female sexual maturation of the nematode further comprises monitoring a gonadal sheath cell contraction.
13. The method of claim 9, wherein monitoring the female sexual maturation of the nematode further comprises monitoring an ovulation.
14. A method of identifying an anti-nematode agent, comprising:

affixing a test compound to a matrix;

incubating the test compound with a major sperm protein polypeptide;

washing the test compound to remove the major sperm protein polypeptide that is not bound to the test compound;

5 detecting a composition including the test compound and the major sperm protein polypeptide;

administering the test compound to a nematode; and

10 observing a female sexual maturation of the nematode, wherein inhibiting the female sexual maturation indicates that the test compound includes the anti-nematode agent.

15. The method of claim 14, wherein the major sperm protein polypeptide is labeled.

16. The method of claim 14, wherein observing the female sexual maturation of the nematode further comprises observing an oocyte meiotic maturation.

15 17. The method of claim 14, wherein observing the female sexual maturation of the nematode further comprises observing a gonadal sheath cell contraction.

18. The method of claim 14, wherein observing the female sexual maturation of the nematode further comprises observing an ovulation.

20 19. The method of claim 14, wherein the nematode is selected from a group consisting of: a *fog-1* nematode, a *fog-2* nematode, a *fog-3* nematode, a *fem-1* nematode, a *fem-2* nematode, a *fem-3* nematode, and a *gld-1* nematode.